

# Darex® II AEA

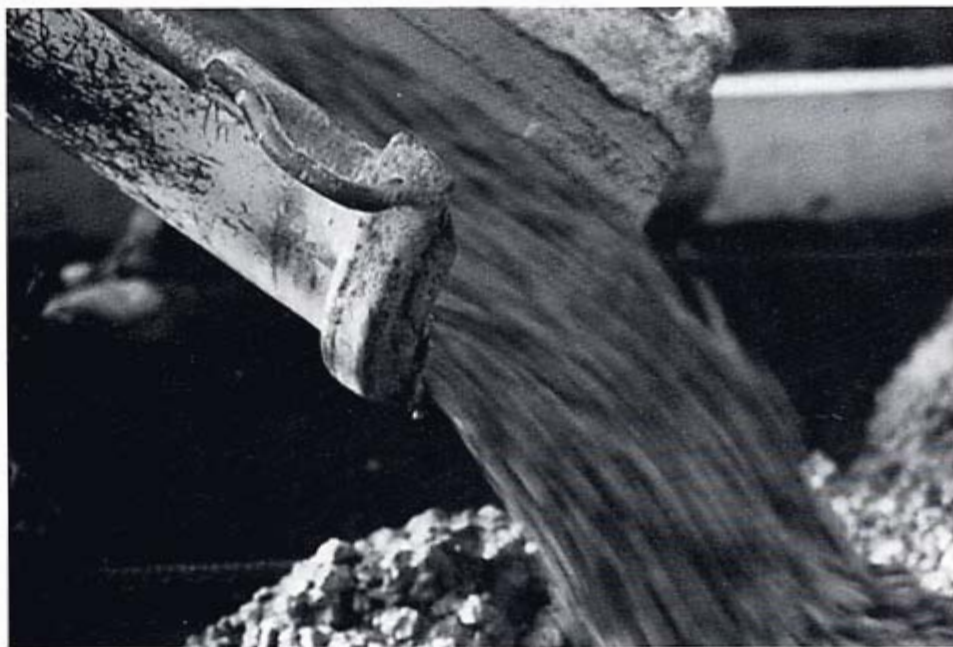
Air-Entraining Admixture ASTM C 260

## Description

Darex® II AEA is an air-entraining admixture which generates a highly stable air void system for increased protection against damage from freezing and thawing, severe weathering, or deicer chemicals. Darex II AEA is a complex mixture of organic acid salts in an aqueous solution specifically formulated for use as an air-entraining admixture for concrete and is manufactured under rigid control which provides uniform, predictable performance. It is supplied ready to use and does not require pre-mixing with water. Darex II AEA is a dark brown liquid. One Liter weighs 1.04 kg (8.7 lb/gal). Darex II AEA complies to ASTM C 260 Standard Specifications for Air-Entraining Admixtures for Concrete.

## Uses

Darex II AEA is used in ready-mix, block, and concrete products plants to improve air entrainment stability. It is particularly effective in maintaining air content during longer haul times. Darex II AEA performs well in conventional concrete and is effective in plasticizing mixes and with slag, lightweight, or manufactured aggregates which tend to produce harsh concrete.



Darex II AEA entrains air effectively with microsilica concrete and with fly ash concrete.

## Air-entraining Action

By agitation of concrete mixers, Darex II AEA disperses and generates millions of discrete semi-microscopic bubbles throughout the concrete composite. Once thoroughly mixed, the concrete contains a stable network of bubbles which act much like ball bearings increasing mobility, or plasticity, of the concrete. This

aids workability to the mix and permits a reduction of water with no loss of slump. Placeability is improved. Bleeding, segregation, and green shrinkage are minimized.

Through the purposeful entrainment of air, Darex II AEA markedly increases the durability of concrete to all exposures.

## Compatibility with Other Admixtures

Darex II AEA is fully effective and compatible in concrete with other admixtures and may be used with water-reducing admixtures, accelerators, and initial set retarders such as WRDA® with HYCOL™, WRDA, PolarSet® and Daratard®. Darex II AEA also effectively entrains air with microsilica admixtures such as Force 10,000® and calcium nitrite admixtures such as DCI®.

Each admixture should be added separately to the concrete.

## Addition Rates

There is no standard addition rate for Darex II AEA. The amount to be used will depend upon the amount of air required under job conditions, usually in the range of 4 to 7%. Typical factors which might influence the amount of air entrained are temperature, cement, sand gradation, and use of extra fine materials such as fly ash. Typical Darex II AEA addition rates generally range from 30 to 320 mL/100 kg (½ to 5 fl oz/100 lb) of cement.

The air-entraining efficiency of Darex II AEA becomes even greater when used with water-reducing and set-retarding agents. This may allow a reduction of up to ⅔ in the amount of Darex II AEA required for the specified air content.

## Mix Adjustment

Entrained air results in increased yields with a consequent decrease in the cement content of the placed concrete. This condition calls for a mix adjustment, usually accomplished by reducing the fine aggregate content. This is in addition to the reduction in water content brought about by the increase in plasticity.

## Dispensing Equipment

A complete line of accurate dispensing equipment is available. These dispensers can be located to discharge into the water line, the mixer, or on the sand.

## Packaging

Darex II AEA is available in bulk, delivered by metered tank trucks and in 210 L (55 gal) drums. Darex II AEA contains no flammable ingredients. Darex II AEA

WILL FREEZE AT ABOUT -1°C (30°F), BUT ITS AIR-ENTRAINING PROPERTIES ARE COMPLETELY RESTORED BY THAWING AND THOROUGH MECHANICAL AGITATION.

## Architects' Specification for Concrete Air-entraining Admixture

Concrete shall be air entrained concrete, containing 4 to 7% entrained air. The air contents in the concrete shall be determined by the pressure method (ASTM Designation C 231), gravimetric method (ASTM Designation C 138) or volume metric method (ASTM Designation C 173). The air-entraining admixture shall be Darex II AEA as manufactured by Grace Construction Products, or equal. The air-entraining admixture shall be added at the concrete mixer or batching plant at approximately 30 to 320 mL/100 kg (½ to 5 fl oz/100 lb) of cement, or in such quantities as to give the specified air contents.

W.R. Grace & Co.-Conn. 62 Whittemore Avenue Cambridge, MA 02140

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